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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/729,344

12/05/2003

David H. Shen

1137

7590

02/01/2005

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EXAMINER

HAM, SEUNGSOOK

ART UNIT

PAPER NUMBER

2817

DATE MAILED: 02/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/729,344

Applicant(s)

SHEN, DAVID H.

Examiner

Seungsook Ham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/5/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "24" (see specification, page 5, line 7). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

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Claims 1-14 are objected to because of the following informalities:

Claim 1 must be in one sentence form only;

In claim 4, "the package substrate" lacks antecedent basis;

In claims 10 and 11, line 1, "the" should be deleted; and

In claim 14, line 1, "the circuit component values" lacks antecedent basis.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 9, "other known transmission line types" are indefinite since the applicant failed to specifically point out the metes and bound of the invention.

Claims 1-14 are rejected as failing to define the invention in the manner required by 35 U.S.C. 112, second paragraph.

The claim(s) are narrative in form and replete with indefinite and functional or operational language. The structure which goes to make up the device must be clearly and positively specified. The structure must be organized and correlated in such a manner as to present a complete operative device. The claim(s) must be in one

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sentence form only. Note the format of the claims in the patent(s) cited. In claim 1, it is unclear as to whether the applicant is claiming a method step or a device.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-6, 9 and 10-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Aikawa et al. (US Pat. 6,798,319 B2).

Aikawa et al. (figs. 2A and 2B) discloses a method for implementing a resonant circuit comprising: an input signal 3 connected to an input of a transmission line 2 (which is coplanar waveguide); a capacitive load 6 (the variable capacitance diode 6 that is near the output signal line 4) is connected to an output 4 of the transmission line and a parallel capacitive load 6 (the variable capacitance diode that is near the input signal line 3) is connected to the input signal 3.

Regarding claims 3, 4, 6 and 9, Aikawa et al. teaches that the transmission line can be formed in a semiconductor material/substrate, slot line, IC chip package substrate, etc. (col. 10, lines 11-26).

Regarding claims 10 and 11, Aikawa et al. shows that the capacitive load and the parallel capacitive loads 6 are variable/tunable (see abstract).

Regarding claims 12-14, Aikawa et al. teaches that the transmission line/signal line 2 may have a length of $\lambda/4$ (col. 9, lines 5-13). Thus, the circuit component values recited in claim 14 is inherent from the device of Aikawa et al. since the structures of applicant's claimed invention and Aikawa et al. are the same.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4, 5, 9, and 12-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Uda et al. (US Pat. 6,140,892).

Uda et al. (fig. 38) discloses a method for implementing a resonant circuit comprising: an input signal NA connected to an input of a $\lambda/4$ wavelength transmission line L1; a capacitive load 103 is connected to an output NB of the transmission line and a parallel capacitive load 102 is connected to the input signal NA.

Regarding claims 4, 5 and 9, Uda et al. teaches that the transmission line can be implemented on IC (col. 1, lines 10-15).

Regarding claims 12-14, Uda et al. teaches that the transmission line/signal line L1 have a length of $\lambda/4$ (col. 1, lines 36-42). Thus, the circuit component values recited in claim 14 is inherent from the device of Uda et al. since the structures of applicant's claimed invention and Aikawa et al. are the same.

Claims 1, 2, 8, 9, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Komazaki et al. (US Pat. 5,525,954).

Komazaki et al. (fig. 8) discloses a method for implementing a resonant circuit comprising: an input signal 201 connected to an input of a stripline transmission line 204; a capacitive load 205 is connected to an output of the transmission line and a parallel capacitive load 202 is connected to the input signal 201.

The circuit component values recited in claim 14 is inherent from the device of Komazaki et al. since the structures of applicant's claimed invention and Komazaki et al. are the same.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aikawa et al. (US Pat. 6,798,319 B2).

Implementing the transmission line into a microstrip line or stripline type is considered as an obvious modification since such techniques are well known in the art, and they requires only a routine skill in the art.

Claims 3, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uda et al. (US Pat. 6,140,892).

Implementing the transmission line on a semiconductor substrate is considered as an obvious modification since Uda et al. teaches disposing the transmission line in an integrated circuit which commonly uses a semiconductor substrate as a supporting

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substrate. Moreover, Implementing the transmission line into a microstrip line or stripline type is considered as an obvious modification since such techniques are well known in the art, and they require only a routine skill in the art.

Claims 3-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komazaki et al. (US Pat. 5,525,954).

The different design techniques for the transmission line are considered as obvious design modification since such design techniques are well known in microwave device art, and also they require only a routine skill in the art.

Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komazaki et al. (US Pat. 5,525,954) or Uda et al. (US Pat. 6,140,892) in view of Suzuki (US Pat. 3,508,177) or Aikawa et al. (US Pat. 6,798,319 B2).

Komazaki et al. and Uda et al. do not show the capacitive load and/or the parallel capacitive load are tunable. However, it is well known in the art to provide tunable capacitors to tune a resonant frequency. Suzuki (fig. 3A) and Aikawa et al. (fig. 2A) disclose a conventional tunable resonant circuit using variable capacitors. Therefore, it would have been obvious to one of ordinary skill in the art to provide a tunable capacitive load and/or parallel capacitive load in the device of Komazaki et al. or Uda et al. to tune the resonant frequency since such tuning technique is well known in the art as shown by Suzuki or Aikawa et al.

Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komazaki et al. (US Pat. 5,525,954) in view of Aikawa et al. (US Pat. 6,798,319 B2) or Suzuki (US Pat. 3,508,177).

Komazaki et al. does not show that the transmission line can be a quarter wavelength. However, it is well known in the art to provide a half wavelength or quarter wavelength transmission line depended on a desire resonant frequency response. Aikawa et al. (col. 9, lines 5-13) or Suzuki (figs. 3A-4B) teaches forming a quarter wavelength or half wavelength transmission line to obtain a desire resonant frequency response. Therefore, it would have been obvious to one of ordinary skill in the art to provide a quarter wavelength transmission line in the device of Komazaki et al. to obtain a desire resonant frequency response as taught by Aikawa et al. or Suzuki and also it requires only a routine skill in the art.

Conclusion

An examination of this application reveals that applicant is unfamiliar with patent prosecution procedure. While an inventor may prosecute the application, lack of skill in this field usually acts as a liability in affording the maximum protection for the invention disclosed. Applicant is advised to secure the services of a registered patent attorney or agent to prosecute the application, since the value of a patent is largely dependent upon skilled preparation and prosecution. The Office cannot aid in selecting an attorney or agent.

Applicant is advised of the availability of the publication "Attorneys and Agents Registered to Practice Before the U.S. Patent and Trademark Office." This publication is for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

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The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Son et al. (US Pat. Appl. Pub. 2001/0030588) and Blackburn (US Pat. 5,241,291) discloses a resonant circuit having a microstrip line or stripline transmission line connected to a capacitor.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seungsook Ham whose telephone number is (571) 272-2405. The examiner can normally be reached on Monday-Thursday, 8:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571)-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Seungsook Ham
Primary Examiner
Art Unit 2817

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